REMARKS

The invention is a method of obtaining connection to a packet data network and a system. In accordance with the invention, a user 12 inputs a request to a first network 10 which requests that the user be authorized for connection to the packet data network 14 through a second work 16. The user request and an authorization of payment is transmitted from the first network 10 to the second network 16 to pay for user's access to the packet data network 14. Network authentication information, which may be a unique random number RAND, a signed response RES, and a cipher key Kc, is used to grant the user authentication to obtain connection through the second network 16 to packet data network 14. The authentication information is transmitted from the first network 10 to the user 12 which informs the user that authentication to obtain connection to the packet data network 16 has been obtained. Furthermore, as illustrated in Fig. 2, the second network debits when the user roams in the second network from a stored value of service units maintained by the second network, which have been granted to the user, a number of consumed units which are identified in each request for consumption of at least one service unit until the number of consumed service units equals the number of granted service units.

Prior to the invention, as described in the specification under the "Description of the Prior Art", a problem existed when a user wished to obtain service from a packet data network while remaining anonymous or where there was no roaming agreement (unlike Rai et al) permitting the user to be billed while roaming from the user's home network to the second network and through which the user is connected to the packet data network. This situation required alternative billing arrangements

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to which the invention is addressed. See the first full paragraph on page 2 of the specification.

The independent claims define a method and system which includes a user request from a first network regarding authorized connection to a packet data network through a second network. All of the independent claims define an interaction from a user through a first network to a second network including payment thereof to obtain use of the packet data network which includes the roaming of the user into the second network. Moreover, independent claims 22 and 24 further recite transmitting to the second network at least one request for consumption of at least one service unit and the second network debits from a stored value of service units which are granted to the user a consumed number of service units. This subject matter is also not suggested by the prior art.

In this regard, claim 1 recites "a method of obtaining connection to a packet data network comprising inputting a user request to a first network which requests the user be authorized for connection to the packet data network through a second network; transmitting from the first network to the second network the user request and an authorization of payment to the second network by the first network for the use by the user of the packet data network; transmitting the second network to the first network authentication information granting the user authentication to obtain connection through the second network to the packet data network; and transmitting the authentication information from the first network to the user which informs the user that the authentication to obtain connection to the packet data network has been obtained (emphasis added).

In this regard, claim 21 recites system comprising: a user; a first network

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which is connectable to the user; a second network which is connectable to the first network and to the user; and a packet data network which is connectable to the second network; and wherein <u>the first network, in response to a user request to the first network that the user be authorized for connection to the packet data network through the second network, transmits to the second network the user request and an authorization of payment by the first network for the use by the user of the packet data network</u>, the second network transmits to the first network authentication information granting the user authentication to obtain connection through the second network to the packet data network, and the first network transmits to the user authentication information which informs the user that authentication to obtain connection to the packet data network has been obtained (emphasis added).

In this regard claim 22 recites a method of obtaining connection to a packet data network comprising: <u>inputting a user request to a first network which requests that the user be authorized for connection to the packet data network through a second network; transmitting from the first network to the second network the user request and an authorization of payment to the second network by the first network for the use by the user of the packet data network;</u> transmitting from the second network to the first network authentication information granting the user authentication to obtain connection through the second network to the packet data network; transmitting the authentication information from the first network to the user which informs the user that authentication to obtain connection to the packet data network has been obtained; and after the user is informed that authentication to obtain connection to the packet data network has been obtained, <u>the user transmits to the second network at least one request for consumption of at least one service</u>

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unit and the second network debits from a stored value of service units which are granted to the user a consumed number of service units (emphasis added).

In this regard, claim 24 recites a system comprising: a user; a first network which is connectable to the user; a second network which is connectable to the first network and to the user; and a packet data network which is connectable to the second network; and wherein the first network, in response to a user request to the first network that the user be authorized for connection to the packet data network through the second network, transmits to the second network the user request and an authorization of payment by the first network for the use by the user of the packet data network, the second network transmits to the first network authentication information granting the user authentication to obtain connection through the second network to the packet data network, and the first network transmits to the user authentication information which informs the user that authentication to obtain connection to the packet data network has been obtained; and after the user is informed that authentication to obtain connection to the packet data network has been obtained, the user transmits to the second network at least one request for consumption of at least one service unit and the second network debits from a stored value of service units which are granted to the user a consumed number of service units (emphasis added).

In this regard, claim 26 recites a method of obtaining connection to a packet data network comprising: inputting a user request to a first network which requests that the user be authorized for connection to the packet data network through a second network; transmitting from the first network to the second network the user request and an authorization of payment to the second network by the first network

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for the use by the user of the packet data network; transmitting from the second

network to the first network authentication information granting the user

authentication to obtain connection through the second network to the packet data

network; transmitting the authentication information from the first network to the user

which informs the user that authentication to obtain connection to the packet data

network has been obtained; the user roams to the second network; the user

requests connection to the packet data network while roaming in the second

network; and the second network grants connection to the packet data network while

roaming in the second network based upon the authorization of payment received by

the second network.

Claims 1-3, 5-18, 21-30, 32, 34 and 35 stand rejected "under 35

U.S.C. 102(e) as being unpatentable over Rai (6,577,643)". These grounds of

rejection are traversed for the following reasons. As the Examiner is aware, an

anticipation rejection requires the Examiner to prove that every limitation of the

rejected claim is literally or inherently present in Rai et al.

As reproduced above, each of the independent claims recites a method of

obtaining connection to a packet data network or a system which includes the

combination of a user request inputted to a first network which requests that the user

be authorized for connection to a packet data network through a second network in

combination with the transmission from the first network to the second network, the

user request, and an authorization of payment to the second network by the first

network for the use by the user of the packet data network. While the Examiner

states that this subject matter is found in Rai et al, it is submitted that it is not.

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Rai et al disclose an architecture which is fundamentally different than that of
the present invention in that the roaming of the roaming end system 60 to the foreign
wireless service provider 62 in Fig. 3 is subject to a service agreement. See
column 8, lines 41-61, where it is described that the roaming end system is subject
to a contractual relationship between the foreign wireless service provider 62 and the
home service wireless provider 70. Since there is a preexisting contractual
relationship between the home network and the foreign network, there is no
transmission of an authorization of payment to the second network by the first
network for the use by the user of the packet data network as recited in the claims.
In fact, the prior contractual relationship makes the transmission of the authorization
by the present invention totally unnecessary. Moreover, the reason the present
invention utilizes the authorization of payment is in the prior art there was a need for
a payment mechanism to obtain information from packet data networks requiring
alternative billing arrangements, i.e. arrangements that do not involve a prior
contractual relationship between the home network and the network in which the
mobile equipment is roaming as specifically taught by Rai et al.

Moreover, column 25, lines 42-46, of Rai et al recite "[t]o provide service to
roaming end systems, the foreign network and the home network are authenticated
to each other for accounting and billing purposes using the Radius R protocol for
authentication and configuration...authentication is performed at the time of end
system registration". This does not describe the claimed authorization of payment
as recited in the independent claims. Instead, this is the mechanism of how the prior
contractual relationship is actually executed between the home and foreign networks
to provide an account of the charge for the servic provider.

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Rai et al goes on to describe in columns 27-31 the details of how the
accounting is performed. Nowhere is there any reference to any transmission of an
authorization of payment to the foreign network by the home network since Rai et
al's in place contractual relationship, as implemented by the aforementioned
accounting procedures, makes a transmission of an authorization of payment totally
unnecessary. Moreover, the network of the type described by Rai et al does <u>not</u>
have the problems solved by the present invention regarding the prior art described
in the specification which addresses the situation where the user wishes to remain
<u>anonymous</u> or when there is no <u>roaming agreement</u> which is the very situation <u>not</u>
present in Rai et al where there is a roaming agreement in place.

Claims 2 and 3 further limit claim 1 reciting that the user request includes a
quantification of connectivity which the user requests to the packet data network and
the quantification comprises at least one service unit with the service unit being
encoded with a random number. This subject matter is not taught by Rai et al. The
Examiner cites column 27, line 44, through column 30, line 46, and column 6,
lines 26-35. However, while the cited portions of Rai et al do pertain to accounting,
they do not suggest to a person of ordinary skill in the art the subject matter of
claims 2 and 3. If the Examiner persists in the stated grounds of rejection, it is
requested that he specifically point out where in Rai et al he finds the user request,
including a quantification of connectivity which the user requests to the packet data
network and the quantification comprises at least one service unit with each service
unit being encoded with a random number. As has been stated above, the
contractual agreement between the home network and the foreign wireless service
provider in Rai et al makes the subject matter of claims 2 and 3 something that

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would not be utilized and it is submitted that it is not disclosed. The Examiner's reliance on column 30, lines 45-56, is a description of accounting packets which are not a quantification of connectivity which the user requests to the packet data network. Moreover, the disclosure in lines 26-35 of column 6 also does not disclose the aforementioned subject matter.

Claim 5 further limits claim 1 in reciting that the authentication information comprises a shared key which may be used to create secure communications between the user and the packet data network. The Examiner's reference to column 26, lines 4-10, pertains to shared secrets between the home network and the foreign network which is not the same as what is recited in claim 5 pertaining to secure communications between the user and the packet data network.

Claim 6 further limits claim 5 in defining the nature of the authentication information. Claim 6 is patentable for the same reasons set forth above with respect to claim 5.

Claims 7, 9 and 11 are patentable for the same reasons set forth above with respect to claim 5.

Claim 10 further limits claim 5 in reciting the second network computes a subscriber identification module SIM comprising a number of service units with each service unit comprising a different random access number uniquely identifying each service unit, a signed response and a shared key Kc. As has been stated above, Rai et al do not disclose the concept of service units in view of the contractual billing arrangement between the home network and the foreign network.

Claim 12 is patentable for the same reasons set forth above with respect to claim 10.

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Claims 13-17 further limit claims 1-5 in reciting that "the inputting of the user request to the first network, the transmitting of the user request and an authorization of payment to the second network, and the transmitting of the authentication network from the second network to the first network and to the user are by secure communications". Claims 13-17 are patentable for the reasons that Rai et al do not anticipate claims 1-3 and 5.

Claim 18 further limits claim 3 in reciting "after the user is informed that authentication to obtain connection to the packet data network has been obtained, the user requests the user transmits to the second network at least one request for consumption of at least one service unit comprising a random number RAND and a signed response SRES; the second network compares the random number RAND and signed response SRES of each request for consumption of at least one service unit received from the user with stored random numbers RAND and signed responses SRES to determine if a match exists; and if a match exists, the second network permits data packets to pass through the second network between the user and the packet network". As pointed out above, Rai et al do not disclose the utilization of service units let alone the detailed transmissions recited in claim 18.

Claims 19 further limits claim 18 in reciting the second network debits from a stored value of service units which has been granted to the user a number of consumed service units which are identified in each request for consumption of at least one service unit until the number of consumed service units equals the number of granted service units. Rai et al do not disclose the service units let alone the consumption as recited in claim 19.

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Claim 23 further limits claim 22 in reciting the number of consumed service units are identified in each request for consumption of at least one service unit until the number of consumed service units equals a number of granted units. As has been pointed out above, Rai et al do not pertain to service units and therefore, do not anticipate claim 23.

Claim 25 limits claim 24 in reciting the number of consumed service units are identified in each request for consumption of at least one service unit until the number of consumed service units equals the number of granted units. Claim 25 is patentable for the same reasons set forth with respect to claim 23.

Claim 27 further limits claim 26 in reciting the user request includes a quantification of connectivity which the user requests to the packet data network; and the authorization of payment quantifies an amount of payment that the first network will pay to the second network for connection of the user to the packet data network when the user roams in the second network; and payment for the connection of the user while roaming in the second network for connection to the packet data network is charged against the authorization. As has been pointed out above, Rai et al do not disclose the quantification of connectivity which the user requests to the packet data network and does not disclose the authorization of payment let alone quantifying an amount of payment that the first network will pay to the second network for connection of the user to the packet data network when the user roams in the first network; and payment for the connection of the user while roaming in the second network for connection to the packet data network is charged against the authorization.

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Claim 28 further limits claim 26 in reciting the authentication information comprises a shared key which may be used to create secure communications between the user and the packet data network. Claim 28 is patentable for the same reasons set forth above with respect to claim 5.

Claim 29 limits claim 28 in reciting the authentication information is a subscriber identification module SIM...and the shared key Kc. Claim 29 is patentable for the same reasons set forth above with respect to claim 6.

Claim 30 further limits claim 26 in reciting the user request includes a quantification of connectivity which the user requests to the packet data network; and the quantification comprises at least one service unit with each service unit being encoded with a random number. As has been pointed out above, Rai et al do not disclose quantification of service units let alone each service unit being encoded with a random number.

Claim 32 further limits claim 27 in reciting that the quantification comprises at least one service unit with each service unit being encoded with a random number. Claim 32 is patentable for the same reasons set forth above with respect to claim 30.

Claim 34 further limits claim 26 in the same manner as claim 18 limits claim 3. Claim 34 is patentable for the same reasons set forth above with respect to claim 18.

Claim 35 further limits claim 27 in the same manner that claim 34 further limits claim 26. Claim 35 is patentable for the same reasons set forth above with respect to claim 34.

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Claims 4, 19, 20, 31 and 33 stand rejected under 35 U.S.C. §103 as being unpatentable over Rai et al in view of United States Patent 5,930,777 (Barber). Barber has been cited as disclosing debiting for a stored value of service units. However, Barber does not disclose the deficiencies noted above with respect to Rai et al. Moreover, there is no basis in the record why a person of ordinary skill in the art would be led to modify the teachings of Rai et al over the teachings of Barber to arrive at the rejected claims except by impermissible hindsight.
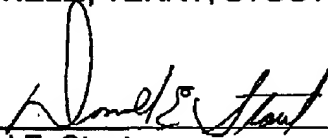
In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance.

Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (0173.37066X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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Attachments

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